

**Purpose/Application**

Off-loading and stringing of pipe refers to the removal of tubular steel from a trailer and placing it along the right-of-way close to where it will be eventually placed in the ground.

**PPE**

- Hard hat
- Safety glasses
- Steel toe boots
- Gloves
- FRC Cover-alls

**TRAINING**

- Certified or competent truck drivers and side boom operators
- Competent workers trained in off-loading and stringing pipe.
- Absolutely no green workers to off-load and string pipe on their own until trained competent worker

**TOOLS/EQUIPMENT**

- Pipe trucks
- Side boom
- Off-loading hooks or calipers
- Tag lines
- Load securing straps
- Tarps/nets

#	Job Steps	Hazards	Control Measures
1.	String out pipeline skids, prior to off-loading pipe so when the pipe is set down, it will not roll or touch the ground.	<ul style="list-style-type: none"> <li>▪ Back and muscle strains</li> <li>▪ Slivers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Warm up muscle and use proper lifting techniques and always wear gloves.</li> </ul>
2.	Identify all overhead power line crossings, set up warning signs.	<ul style="list-style-type: none"> <li>▪ Electrocution</li> <li>▪ Power outage</li> <li>▪ Fire/explosion</li> </ul>	<ul style="list-style-type: none"> <li>▪ Maintain safe distance from power lines.</li> <li>▪ Use spotter with high visibility vest when required.</li> </ul>
3.	Inspect all hooks, calipers, cables and tag lines prior to use.	<ul style="list-style-type: none"> <li>▪ Equipment failure</li> <li>▪ In the line of fire</li> </ul>	<ul style="list-style-type: none"> <li>▪ Thorough pre-use inspection and identify.</li> <li>▪ Report and remove any damaged equipment from services.</li> <li>▪ Never use any equipment found to have defects or is suspect</li> </ul>
4.	Bringing pipe truck onto right-of-way	<ul style="list-style-type: none"> <li>▪ Pipes sliding or rolling off of trailer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Restrain pipe when on truck while moving; use nylon straps or cement where applicable</li> </ul>
5.	Pre-use inspection of side boom	<ul style="list-style-type: none"> <li>▪ Equipment failure</li> </ul>	<ul style="list-style-type: none"> <li>▪ Thorough inspection on all critical components of side boom prior to stringing.</li> <li>▪ Ensure boom certificate is up to date or current.</li> <li>▪ Ongoing continuous maintenance of equipment.</li> <li>▪ Operator must warm up the brakes before working the unit and any time the unit sits without working over an extended time.</li> </ul>
6.	Un-tarping	<ul style="list-style-type: none"> <li>▪ Slips / trips / falls</li> <li>▪ Crushing injuries</li> <li>▪ Back and muscle strains</li> <li>▪ Pipe roll out</li> </ul>	<ul style="list-style-type: none"> <li>▪ When and where-ever possible direct pipe truck onto most level ground available on right-of-way.</li> <li>▪ Ensure all deck pins are in place and load straps are secure. Assist driver with removal of nets and tarps.</li> </ul>

#	Job Steps	Hazards	Control Measures
7.	Hooking pipe with pipe hooks to remove from truck trailer and set on right-of-way.	<ul style="list-style-type: none"> <li>▪ Slips / trips / falls</li> <li>▪ Pinch point</li> <li>▪ Crushing</li> <li>▪ Muscle and back strains</li> </ul>	<ul style="list-style-type: none"> <li>▪ Position boom at centre of trailer load of pipe.</li> <li>▪ Front person will use access steps on truck to access trailer to hook pipe, worker to the rear of trailer will use a step ladder to access trailer to hook it from the rear.</li> <li>▪ If rear worker's cable on his hook is too tight boom operator will let out more cable, to assist rear worker with putting rear hook into place.</li> <li>▪ Watch footing and pinch points. Stay out of the line of fire and maintain eye contact with equipment operator.</li> <li>▪ Warm up stretch muscle and use proper body mechanics and technique.</li> <li>▪ Wear appropriate gloves at all times.</li> </ul>
8.	Off-loading pipe with hooks	<ul style="list-style-type: none"> <li>▪ Crushing</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rear worker will signal front worker as to when his hook is securely hooked into pipe.</li> <li>▪ The front worker will hand his tag line down to other worker on the ground.</li> <li>▪ Once all workers are clear of the path of the pipe, the front person will check that both hooks are on the same joint of pipe, then signal the operator to lift pipe off of trailer deck.</li> <li>▪ Operator will ensure boom is centered prior to lifting pipe to ensure pipe does not swing.</li> <li>▪ Once pipe is raised off of trailer deck truck driver will be signaled do move ahead or boom will move pipe to resting location depending on situation.</li> <li>▪ Off-load pipe one tier at a time. Always stay out from under any suspended loads.</li> <li>▪ <b>Do not remove deck pins until the last tier and only if it's safe to do so.</b></li> <li>▪ <b>Use wood wedges to secure pipes from rolling prior to removing deck pins.</b></li> </ul>

#	Job Steps	Hazards	Control Measures
9.	Unloading pipes with calipers	<ul style="list-style-type: none"> <li>▪ Slips / trips / falls</li> <li>▪ Pinch point</li> <li>▪ Crushing</li> <li>▪ Muscle and back strains</li> </ul>	<ul style="list-style-type: none"> <li>▪ Clearly mark the centre of the pipe.</li> <li>▪ Centre the boom with the load of pipes.</li> <li>▪ The worker will latch the caliper on the pipe centre, making sure that the calipers are completely closed.</li> <li>▪ Worker that put calipers on will then put a tag line on the front end of the pipe being hoist.</li> <li>▪ He will then pass it down to front spotter on the ground.</li> <li>▪ The back spotter will hook up rear tag line using step ladder to access if out of reach.</li> <li>▪ The front spotter will signal boom operator to hoist pipe.</li> <li>▪ The boom operator will hoist pipe one or two feet.</li> <li>▪ The worker that put calipers on will check to ensure pipe is balanced.</li> <li>▪ If pipe is unbalanced front spotter will signal boom operator to lower the pipe so worker on trailer can reposition the calipers.</li> <li>▪ Once calipers are repositioned and it safe to do so, front spotter will signal boom operator to raise pipe one or two feet.</li> <li>▪ If pipe is balanced front spotter can signal pipe truck driver to move ahead, or depending on circumstances signal boom operator to move pipe off trailer to R.O.W.</li> <li>▪ Repeat this procedure removing one tier at a time until all pipes are removed from trailer.</li> <li>▪ <b>Do not remove deck pins until the last tier and only if it's safe to do so.</b></li> <li>▪ <b>Use wood wedges to secure pipes from rolling prior to removing deck pins.</b></li> </ul>



#	Job Steps	Hazards	Control Measures
10.	Stringing pipe on ROW	<ul style="list-style-type: none"><li>▪ Crushing</li><li>▪ Injuries</li><li>▪ Pinches</li></ul>	<ul style="list-style-type: none"><li>▪ After each joint is removed, the truck will proceed to the next location and the boom operator can set the pipe down.</li><li>▪ The back spotter will direct the boom operator at to where to set pipe down.</li><li>▪ <b>Keep fingers from between the joints when setting pipes down.</b></li><li>▪ Other crew members will position skids under pipe to prevent it from touching the ground.</li><li>▪ The pipe will be blocked to prevent it from rolling.</li><li>▪ The crew will then walk to the truck to string the next pipe.</li><li>▪ Stay out of the firing line.</li><li>▪ Stay out of pinch points.</li><li>▪ Keep hands out of the end of the pipe.</li><li>▪ Maintain eye contact with boom operator at all times.</li><li>▪ Maintain safe clearance of trailer wheels</li></ul>

**Additional Precautions:**

- Pipe with internal coating need specific handling procedure, refer to manufacturer’s specifications.
- Check calipers periodically to ensure no frost build up occurs.
- Do not position yourself between the boom and pipe, between the pipe and trailer.
- Do not stand by the load of pipe as some joints may fall off.
- Never stand underneath a suspended load.
- Always walk in plain view of the side boom operator and anticipate his movement.
- Do not run on the load of pipes.
- Keep your body parts from between pipes at all times to avoid being crushed.
- Take care not to damage the end of the pipe or damage the pipe jacket and create “holidays” in coating.

**REFERENCE/REGULATIONS**

- Alberta OH&S Codes
  - Part 2 Hazard Assessment, Elimination and Control
  - Part 6 Cranes, Hoists and lifting devices
  - Part 14 Lifting and Handling Loads
  - Part 18 Personal Protective Equipment
  - Part 19 Powered mobile equipment
  - Part 21 Rigging
- British Columbia OH&S Regulation
  - Part 4 General Conditions – Section 4.13
  - Part 8 Personal Protective Clothing and Equipment
  - Part 14 Cranes and hoists
  - Part 15 Rigging
  - Part 16 Mobile Equipment
- Saskatchewan OH&S Regulation and Code
  - Part 7 Personal Protective Equipment
  - Part 11 Powered Mobile Equipment
  - Part 13 Hoists, Cranes and Lifting Devices
  - Part 14 Rigging

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